

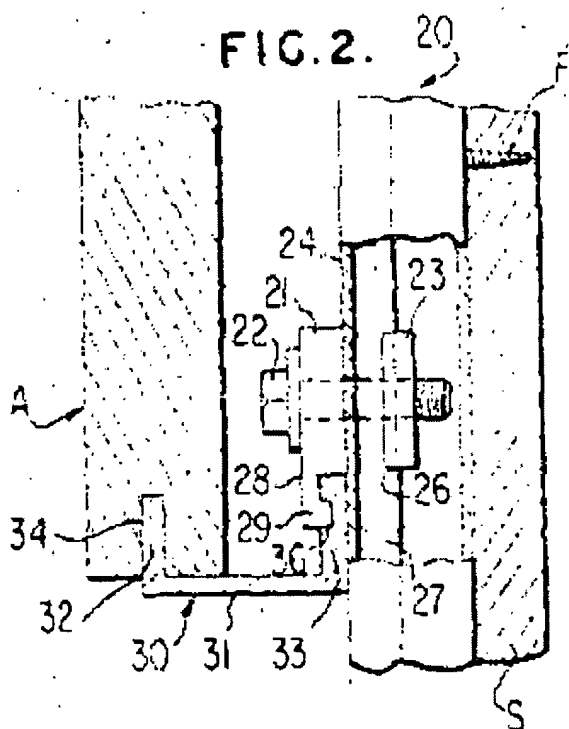
## Improved building system for attaching panels to structural supports

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### Abstract of GB1125123

1,125,123. Fixing facing slabs to wall structures. J. S. ZIBELL. 1 Sept., 1965, No. 37269/65. Heading E1W. A facing slab such as a marble panel A is secured to a structural member S by anchoring members 20, 30 which are interconnected together by a bolted clamp 21, 22, 23 as shown, the member 20 being in the form of a U-shaped member having re-entrant flanges 27 and the member 30 having a flange 32 to engage a groove in the member A. The member 30 may be replaced by an I-section member which is mounted on the member 20 by a modified load-bearing clip, see Figs. 3, 4 and 5 (not shown) or by a non-load bearing clip stamped from sheet metal, see Fig. 3a (not shown). Again, the member 20 may be directly connected to the slab by a clip having spring fingers or rigid flanges to engage the grooves therein, such clips having 'tongues of flanges to locate same on the member 20, see Figs. 6-13, (not shown).



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## PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

## Improved building system for attaching panels to structural supports

I JULES SCOTT ZIBELL, a Citizen of the United States of America, of 6851, Roswell Road N.E., Atlanta (formerly of 2, Skyland Drive, Tate), Georgia, United States of America, do hereby declare the invention, for which I pray that a patent may be granted to me and the method by which it is to be performed, to be particularly described in and by the following statement:

The present invention relates in general to the anchoring of wall facing material to structural members and more particularly to anchoring systems for facing slabs for both interior and exterior construction.

According to the present invention a building system comprises in combination a base structure, load supporting slabs of facing material having kerfs formed in at least two opposed peripheral edges thereof and an anchoring system therefor, wherein the anchoring system includes a plurality of U-shaped channel struts as hereinafter defined secured substantially vertically in spaced relation to each other to the base structure on which said slabs are anchored by a plurality of anchor members, each anchor member having a web portion, a kerf portion inserted in a kerf of a slab of facing material, and a strut engaging portion secured to a strut.

The phrase 'U-shaped channel strut' as used in this specification and in the claiming clauses thereof is to be understood as meaning a U-shaped channel strut having a channel-like section with inwardly facing flanges each of which has a re-entrant portion extending within the channel-like section.

The present invention is most advantageously used with slabs of for example marble having a kerf or groove formed in at least two opposed peripheral edges thereof.

According to one embodiment a bedding

of base channel anchor and cap channel anchor are formed from an extruded U-shaped channel member. Preferably, one leg of the U-shaped member is made longer than the other leg of the U-shaped member and this long leg is formed with a longitudinally extending groove which receives a recessed projection formed on a clip element. The arrangement according to this embodiment is such that the outside surface of the U-shaped strut member and the surface of the clip carrying the recessed projection are coplanar. When a bolting means for securing the clip to the strut member is applied, the U-shaped channel member is rigidly held in place.

According to a second embodiment, an H-shaped extruded channel member is secured to the strut member by means of a two part anchoring clip, one of the clip parts having a hook formed on one end thereof for hooking over a portion of one of the flanges of the H-shaped channel member while the other clip part has an extension which cooperates with the hook on said first clip part to substantially surround the flange of the H-shaped channel member abutting said strut member and secured together and to the strut by a cap screw. A tab formed on one of the clip parts facilitates positioning of the two part clip assembly in the strut member. The other flange of the H-shaped channel member has one-half thereof received in the kerf of an adjacent slab. The arrangement is such that the thickness of the web joining the two flanges of the H-shaped member spaces the two contiguous slabs a sufficient distance apart so that a mortar joint may be formed between the two slabs. In addition, a positive weather seal at the joint is effected.

According to another embodiment, the anchoring element comprises a rectangularly

shaped clip member having oppositely disposed spring finger flanges receivable in the kerf formed in two contiguous slabs of facing material. On the opposite end and in 5 opposed relationship to each other are formed a pair of notches, each having spring fingers for gripping the re-entrant or inwardly turned edges of the U-shaped strut member.

- 10 According to another embodiment the anchoring member or clip comprises an extruded T-shaped member with the stem of the T-shaped member having an enlarged end portion, which enlarged end portion is 15 notched on each side thereof for frictional engagement with the re-entrant flange portions of the U-shaped channel strut. The arms of the T-shaped member may be provided with ridges which, when the kerfs of 20 two abutting slabs are fitted thereover, assures a tight fitting of the arms of the T-shaped member in the kerfs of the slabs.

In still another modification, a U-shaped clip anchor is formed from sheet metal. One 25 leg of the clip anchor is bent over on itself to form a spring finger for insertion in the kerf of the slab of facing material. The other leg of the U-shaped clip is slotted so that a securing bolt may be placed prior to 30 the positioning of the clip on the strut member. A flexible rib formed on each side of the slotted leg of the U-shaped clip anchor prevents dislodgement of the anchor from the securing bolt.

- 35 The invention will be further described by way of example with reference to the accompanying drawings in which:

Figure 1 is a front elevational view of one embodiment of this invention;

- 40 Figure 2 is a cut-away of Figure 1;

Figure 3 is an isometric view of another embodiment of the invention;

Figure 3a is a modified clip part of the two part clip assembly shown in Figure 3;

- 45 Figure 4 is a front elevational view of the assembly shown in Figure 3;

Figure 5 is a cross-sectional view of the arrangement shown in Figure 4;

- 50 Figure 6 is an isometric view of a sheet metal anchoring clip used in another embodiment of the invention;

Figure 7 is a top view of an anchoring assembly including the anchoring clip shown in Figure 6;

- 55 Figure 8 is a cross-sectional side view of the arrangement shown in Figure 7;

Figure 9 is an isometric view of an extruded anchoring clip used in a still further embodiment of the invention;

- 60 Figure 10 is a top view of the anchoring device shown in Figure 9 as it is used according to the invention;

Figure 11 is a cross-sectional view of the arrangement shown in Figure 10;

- 65 Figure 12 is an isometric view of another

embodiment of the invention showing a clip anchor for a bedding or base joint;

Figure 13 is an exploded view of another embodiment of the invention showing a cap clip anchor, and

Figure 14 is a view of a marble slab wall constructed in accordance with the invention.

Referring now to Figures 1 and 2 of the drawings a U-shaped metal strut 20 is 75 secured to a structural member S of a base structure to which the facing material A is to be applied by any suitable fastening means, as for example, screws F. There will of course be a plurality of such strut mem- 80 bers 20 secured to the structural members at desired intervals to provide repeating anchoring points. Each U-shaped metal strut may be formed, rolled or extruded to produce a channel-like section with inwardly 85 facing flanges each of which has a re-entrant portion 27. A clip member 21 is secured by cap screw 22 and locking nut 23 in abutting relation to the planar edges 24 of the strut member 20. Locking nut 23 has raised edges 90 26 which fit over the inside edges of the re-entrant portions 27 of the legs of the strut member 20 and prevent turning of the locking nut 23.

One end 28 of clip member 21 is provided 95 with a recessed projection or ridge 29. A continuous U-shaped channel member 30 having a web portion 31 and a kerf engaging short leg 32 and a strut abutting long leg 33 is secured by the clip member 21 in abutting 100 relation to the channel strut 20 and supports the slab A when the kerf 34 of the facing material A is fitted with the kerf engaging leg 32 of the channel member 30. There will, of course, be a clip member at each inter- 105 section or anchoring point of channel member 30 with the struts 20. The long leg 33 of the channel member 30 has a groove 36 which receives the recessed projection 29 of the clip member 21. It will be noted that the long leg 33 of the channel member 30 is 110 thicker than the short leg 32 so that the groove 36 may be formed in the long leg 33 without unduly weakening the support.

While the foregoing description of 115 Figures 1 and 2 relate to a bedding or base channel anchoring arrangement, it will be obvious that this same arrangement may be used as a cap channel anchor for use when changing to another type of material or at 120 window sills, copings, etc. This may be done by securing the clip member 21 in an upright position prior to insertion of the channel member 30. The channel 30 is placed in the kerf 34 of the slab and driven longitudinally 125 until the recessed projection 29 on the clip member 21 is seated within channel groove 36 to interlock these parts. Of course, the width of recessed projection 29 will be slightly less than the width of channel 130

groove 36 to avoid interference when the channel 30 is driven into place.

The anchor shown in Figure 3, 4 and 5 is an intermediate joint anchor and includes an H-shaped channel member 37 having a web 38 joining kerf engaging flange 39 and strut abutting flange 40. Strut abutting flange 40 is secured in an abutting relationship to edges 24 of channel strut 20 by means of a two part clip assembly. A first clip part 41, a hook 42, the hook being formed with an angle section 43, which angles downwardly and outwardly from the body portion of the clip part 41, a base 44 which extends in a direction normal to the body of the clip part 41 and a third portion which is normal to the direction of the base part 44 of the hook 42. As shown in Figure 5, clip part 41 is positioned inside of the channel and has laterally extending flanges or wings 47 which are turned outwardly so as to engage the inside edges of re-entrant portions 27 of the strut 20. A threaded nut 48, which may be integral with the clip part 47, receives a cap screw 49 passing through a second clip part 50. Second clip part 50 is provided with a bore 51 through which passes cap screw 49 so that when cap screw 49 is threadedly engaged with locking nut 48, the clip assembly is secured to the channel strut 20. It will be noted that second clip part 50 has laterally extending flanges or wings 52 which abut edges 24 of the strut member 20. A cut out portion 55 on the lower edge of second clip part 50 fits over the upper portion of flange 40 so that when the cap screw 49 is tightened the flange 40 of the H-shaped member 37 is clamped to strut 20.

Extension 53, which is formed by the cut-out 55 of the clip part 50 extends substantially to the web portion 38 of the H-shaped channel member 37, as does hook part 46 on clip part 41. By this arrangement, a large area of frictional engagement is formed on the H-shaped channel member. It will be noted that the flange 40 of the H-shaped channel member 37 is substantially completely enclosed by the two clip parts 41 and 50 and a portion 24 of the U-shaped channel strut 20. On the upper end of clip part 41 is formed a tab 54, which tab facilitates the positioning of the clip part in strut 20.

It will also be noted that the web portion 38 of the H-shaped channel member 37 gauges the joint thickness which joint may be filled with mortar 56 or other joint filling material.

As shown in Figures 3, 4 and 5 clip part 50 is a solid block of metal. Preferably, however, clip part 50 may be fabricated from relatively heavy gauge sheet metal such as shown in Figure 3a. The part 50' shown in Figure 3a may be stamped from sheet metal so that wings 52' are struck or bent inwardly

to form a shoulder 56 which shoulder abuts the upper edge of flange 40 on the H-shaped channel member 37. Likewise, inwardly bent tab 57 is shaped so that its edges 58 engage the inner side of re-entrant portions 27 on the legs of the U-shaped strut member 20.

In a similar fashion, the clip part 21 shown in Figure 2 may be fabricated from sheet metal as shown in Figure 3a with the downward extension 53' turned inwardly to form an inset or recessed projection similar to the recessed projection 29 shown in Figure 2.

The anchors shown in Figures 1 through 5 are particularly adapted for load bearing installations. The remaining embodiments of the invention are more particularly adapted for non-load bearing installations. As shown in Figures 6, 7 and 8, one such anchoring device comprises a sheet of metal, generally rectangular in shape, in which the body portion 60 carries at one end thereof a pair of oppositely disposed kerf engaging spring fingers 61 and 62, respectively. Each kerf engaging spring finger comprises a straight portion 63, 63' which extends at right angles to the body portion 60 and spring portion 64, 64' which is bent inwardly with respect to straight portion 63, 63'. The distance between the straight portion 63, 63' and the furthest portion of the spring element 64, 64' is somewhat larger than the width of the kerf 34 formed in the facing material. By this arrangement, when the spring fingers are pressed into the kerf of the facing material, spring element 64 or 64' is moved toward the straight portion 63 or 63' to provide a snug, relatively tight, frictional fit of the spring fingers in the kerf of the slab. On each side of the body member 60 there is formed a pair of notches 66 and 66', the portions of the body member 60 which are removed to form the notches 66 remaining attached to the body portion and struck either downwardly or upwardly to form long spring elements 67, 67' and short arms 68 and 68' which cooperate to grip the re-entrant portions 27 of the strut member 20.

It will be noted that each spring element 67, 67' is disposed on the same side of the body member 60 as its corresponding kerf engaging spring finger 63 or 63'. Consequently, the long finger 67 engages the inside edge of the re-entrant portion of the U-shaped strut member at a point above the plane of the body member 60 and provides a stronger support or brace for the body member. This clip element may be applied to the strut member 20 by inserting the body member 60 at an oblique angle through the space between the re-entrant portions 27 of the channel member and given a twisting movement into a horizontal plane.

It will also be noted that the short arms 68, 68' forming part of the material which

is removed to form notches 66, 61' are disposed at right angles with respect to the body member 60. Thus, when the clip has been inserted or affixed to the channel member 20, the projections 68, 68' form a relatively large area of engagement with the planar edges 24 of the legs of the channel strut 20.

The intermediate joint anchor clip shown in Figs. 9, 10 and 11 is formed from an extruded member, which is best seen in Figure 9. This clip anchor includes a web portion 70, kerf engaging flanges 71 and 72 on one end of the web 70 to form a T-shaped element, and an enlarged end of the web, said enlarged end having notches 73 and 74 for receiving and frictionally engaging the re-entrant portions 27 of channel strut 20. Flanges 71 and 72 are provided with raised ribs 76 and 77, respectively, which bear against one side of the walls forming the kerf 34 so as to assure a tight frictional engagement of said flange members with the kerf 34 of the slab of facing material A. It will be noted that the enlarged end of the web 70 is provided with a reduced transverse section 78 and that the side of the notches are parallel to each other. By this arrangement, the clip may be inserted at an oblique angle with respect to the horizontal and given a slight twist to lock it in place. The surfaces 79 and 80 forming walls of the notches 73 and 74, respectively, fit flush with planar edges 24 of the legs of the channel strut 20, and, due to a slight resiliency in the re-entrant portions 27 of the channel strut 20, the web 70 is frictionally held extended from the channel 20.

As explained in connection with the description of Figure 5, the web portion 70 gauges the thickness of the joint between the two contiguous portions of facing material which joint may be filled with joint filling material.

Referring now to Figure 12, there is shown a non-load bearing bedding clip comprising a U-shaped channel member which may be formed from sheet metal. This clip comprises a web 81 and two right angle flanges 82 and 83. Flange 82 is bent down upon itself to form a spring finger having spring element 84 which operates in the same manner as spring element 64 (described in connection with Fig. 6) which frictionally engages the walls of the kerf in a peripheral edge of the facing material. It will be noted that the flange 82 is somewhat shorter than the strut abutting flange 83. Strut abutting flange 83 is provided with a hole through which passes a cap bolt 86, said cap bolt being threadedly engaged with a spring nut assembly (not shown in Fig. 12) so as to secure the clip at any desired position along the channel strut 20. Such a spring nut assembly is shown in Figure 13 and com-

prises a nut 87 having grooves 88 and 89 which receive the edges of the re-entrant portions 27, the spring 90 resiliently holds the locking nut 87 at any desired position along channel strut 20. The long flange 83 of the sheet metal clip is secured by the cap bolt 86 in abutting relationship to the edges 24 of the channel strut 20.

Referring now to Figure 13, a cap clip anchor, similar in configuration to the bedding clip anchor disclosed in Figure 12 with the exception of the modification shown to the long flange 83'. The long flange 83' in this instance is provided with an elongated slot 91 and spring ribs 92. Since the facing material which is anchored by this clip arrangement is already anchored by one of the intermediate joint clip anchors or a bedding joint anchor, the clip anchor shown in Figure 13 is installed after the facing material has been so placed. Thus, it will be seen that the cap bolt 86 moves into slot 91 when the clip is driven in place. Spring ribs 92 hold the clip in place by engagement with the cap bolt 86 after the clip has moved to a position where the kerf engaging flange is seated within the kerf of the facing material.

Fig. 14 is an isometric view of wall assembly incorporating the invention. The bed, or bottom anchor joint, at section V-V may be of a load bearing type as is illustrated in Fig. 2 or may be a nonload bearing type, as illustrated in Fig. 12. The anchor joint taken on the line W-W may be a load bearing intermediate anchor joint as illustrated in the cross-sectional view of Fig. 5 or a nonload bearing intermediate joint as illustrated in Figs. 10 and 11. The cap, or top joint, taken along the line T-T may be the assembly shown in Fig. 5 turned around so that the channel 31 opens downwardly or may be the non-load bearing joint or clip illustrated in Fig. 13. Alternatively, the cap joint may be the clip member illustrated in Fig. 12 inverted. Likewise, the intermediate nonload bearing clip illustrated in Fig. 6 may be employed at the intermediate anchor joints taken along the lines W-W and W'-W' of Fig. 14.

Although there is shown and described preferred embodiments for anchoring facing materials, it will be understood that various other modifications are feasible which still fall within the scope of the invention and accordingly the invention is not intended to be limited except as set forth in the following claims.

#### WHAT I CLAIM IS:—

1. A building system comprising in combination a base structure, load supporting slabs of facing material having kerfs formed in at least two opposed peripheral edges thereof and an anchoring system therefor wherein the anchoring system includes a

plurality of U-shaped channel struts as here-  
 inbefore defined secured substantially ver-  
 tically in spaced relation to each other to  
 the base structure on which said slabs are  
 5 anchored by a plurality of anchor members  
 each anchor member having a web portion,  
 a kerf portion inserted in a kerf of a slab  
 of facing material and a strut engaging por-  
 tion secured to a strut.

10 2. A system as claimed in claim 1 in  
 which each anchor member comprises a  
 channel member at an angle to a said strut  
 and having at least two leg members joined  
 by a web member, said channel member be-  
 15 ing secured to a strut by a clip, comple-  
 mentary locking abutments being formed  
 on one leg of said channel member and on said clip member, and means for  
 securing said clip member to the strut with  
 20 said complementary locking abutments in  
 operative engagement, another of said leg  
 members serving as said kerf portion in-  
 serted in a kerf of a slab of facing material.

25 3. A system as claimed in claim 2 in  
 which and said complementary locking  
 abutments comprise a groove formed on the  
 inside surface of said one leg member and a  
 recessed projection formed on said clip and  
 30 adapted to fit within the groove formed in  
 said one leg member of said channel mem-  
 ber so that the outside surface of said one  
 leg member and the surface of said clip hav-  
 ing said recessed projection therein are sub-  
 stantially co-planar.

35 4. A system as claimed in claim 3 in  
 which said channel member is U-shaped  
 and said one leg member is longer and  
 thicker than the other.

40 5. A system as claimed in claims 2, 3 or  
 4 in which said means for securing a clip  
 member to a strut comprises a locking nut  
 bearing against the inner edges of said re-  
 entrant portions of said strut member, a bolt  
 45 means passing through said clip member and  
 engaged with said locking nut.

50 6. A system as claimed in claim 1 in  
 which each anchor member comprises an  
 H-shaped channel member which is secured  
 to a strut by a clip comprising a first clip  
 55 part having a hook formed on the end  
 thereof, said first clip part having lateral  
 flanges on two sides engageable with the  
 edges of the re-entrant portions of the strut  
 from the inside thereof, a second clip part,  
 60 an extension on said second clip part adapted  
 with said hook to enclose one of the flanges  
 of said H-shaped channel member, which  
 flange serves as a strut engaging portion, a  
 pair of opposed laterally extending flanges  
 on said second clip part on the opposite  
 65 edges of the re-entrant portions of said strut  
 as said first clip part, and screw means for  
 drawing said clip parts together so as to  
 clamp said H-shaped channel member to  
 said strut, the other flange of the H-shaped

channel member serving as a pair of  
 oppositely directed kerf portions inserted in  
 the kerfs of a pair of slabs of facing  
 material.

7. A system as claimed in claim 6 70  
 further including a holding tab formed on  
 one end of said first clip part opposite said  
 hook element for facilitating positioning of  
 said clip parts on said channel strut.

8. A system as claimed in claim 6 or 7 75  
 in which said second clip part is fabricated  
 from sheet metal.

9. A system as claimed in claim 5, 6, 7 or  
 8 in which one of said clip parts has formed  
 thereon an extension, said extension project- 80  
 ing between the re-entrant portions of said  
 strut towards the other clip part.

10. A system as claimed in any of claims  
 1 to 9 in which each channel member ex-  
 tends over a plurality of said struts and a 85  
 plurality of anchoring clips are provided,  
 one at each intersection of a channel mem-  
 ber with one of said struts.

11. A system as claimed in claim 1 in  
 which each anchor member comprises a clip 90  
 element having a generally rectangular body  
 portion, a pair of oppositely turned kerf  
 engaging portions formed on the edges of  
 one end of said body portion, means form-  
 ing friction notches on the opposite end of  
 said rectangular body portion for frictionally 95  
 securing the same to the re-entrant portions  
 of a said U-shaped channel strut.

12. A system as claimed in claim 11 in  
 which each of said pair of oppositely 100  
 turned kerf engaging projections includes a  
 spring tongue deformable by the kerf of a  
 slab fitted over said projections.

13. A system as claimed in claim 1 in  
 which each anchor member comprises an 105  
 extruded clip element comprising a T shaped  
 extrusion, the stem of said T-shaped extru-  
 sion remote from the arms of said T-shaped  
 extrusion being thickened, said thickened  
 portion having a pair of notches formed in 110  
 the lateral edges thereof for frictional en-  
 gagement with the re-entrant portions of the  
 legs of said channel strut to serve as said  
 strut engaging portion, and the arms of said  
 T-shaped extrusion serving as a pair of 115  
 oppositely directed kerf portions inserted in  
 the kerfs of a pair of slabs of facing material.

14. A system as claimed in claim 13 in  
 which each of the arms of the said T-shaped  
 extrusion is provided with a raised ridge for 120  
 securing a tight frictional engagement of said  
 arms in the kerfs of said slabs.

15. A system as claimed in claim 10 and  
 in claims 2, 3, 4 or 5 in which at least a pair  
 of said channel members co-operatively en- 125  
 gages the edges of a plurality of slabs of  
 facing material from opposite sides thereof  
 and between said legs, said web portion of  
 said channel members between said leg  
 members serving as a spacer by spacing the 130

supported slabs from said strut members and as a joint gauge between successive slabs of facing material.

16. A system as claimed in claim 10 and in claims 2, 3, 4 or 5 or as claimed in claim 15 in which the first portion leg members of pairs of adjacent channel members co-operatively support a slab of facing material therebetween.

17. A system as claimed in claim 10 and in any of claims 2, 3, 4 and 5 and in any of claims 6, 7, 8, and 9 mounting a pair of slabs of facing material such as marble, comprising a pair of oppositely facing channel members each having leg members thereon inserted in kerfs formed in the opposite outside edges of said slabs respectively and a third channel member having a flange thereon inserted in kerfs formed in contiguous edges respectively of said slabs.

18. A system as claimed in claim 17 wherein the channel members are extruded sections.

19. A system as claimed in claim 1 in which each anchor member comprises a U-shaped sheet of metal, one leg of said U-shaped sheet of metal being turned inwardly upon itself to form a kerf engaging spring finger, the other leg of said U-shaped sheet of metal being longer than said kerf engaging spring finger, and means for securing the long legs of said anchor member in abutting relation with the outside edges of the legs of said U-shaped channel strut.

20. A system as claimed in claim 19 wherein said long leg of said U-shaped anchor member is provided with a bore hole and said means for securing said anchor member comprises a cap screw passing through said bore hole, and a spring-nut assembly frictionally held against the edges of the re-entrant portions of said channel strut, the threads on said cap screw being threadedly engaged with the threads of said spring-nut assembly.

21. A system as claimed in claim 19 wherein said long leg of said U-shaped anchor member has an elongated slot intermediate to the edges thereof and a spring rib running along said long leg normal to the direction of said elongated slot, and said means for securing said anchor member comprises a cap screw, means for securing said cap screw on said strut so that the head thereof projects outwardly therefrom so that when said U-shaped anchor member is positioned in abutting relationship with the edges of said U-shaped strut and said cap screw head within said elongated slot, said spring rib resists the removal thereof.

22. A system as claimed in any preceding claim in combination with a plurality of slabs of facing material and forming a wall.

23. A wall comprising a plurality of load supporting slabs or facing material such as marble, arranged in a generally co-planar assembly, each slab having kerfs in opposed peripheral edges thereof, a plurality of U-shaped struts as hereinbefore defined having re-entrant flange portions on the legs thereof, said struts being secured substantially vertically in spaced relation to each other to structural members supporting the wall, a plurality of channel members, including a top channel member, a bottom channel member and at least one intermediate channel member, each of the channel members having legs thereon inserted in the kerfs of said slabs, respectively, with legs of said intermediate channel members being inserted in the kerfs formed in contiguous edges of adjacent slabs, anchor members for each of said channel members at the intersection of a channel member with a strut, respectively, said anchor members and another leg of said channel members having complementary locking abutments formed thereon and means securing said anchor members to said struts with said complementary locking abutments on said channel members and on said clip members in operative engagement to receive said channel members to said struts in the above stated relation, said securing means including a locking nut bearing against the inner edges of said re-entrant flange portions and bolt means passing through said anchor members and operatively engaged with said locking nut.

24. A system anchoring load supporting slabs of facing materials having kerfs formed in opposed peripheral edges thereof, constructed and arranged substantially as herein described with reference to and as illustrated in Figs. 1 and 2 or Figs. 3, 3a, 4 and 5 and Fig. 14 of the accompanying drawings.

25. A system anchoring load supporting slabs of facing material having kerfs formed in opposed peripheral edges thereof, constructed and arranged substantially as herein described with reference to and as illustrated in Figs. 6, 7, and 8 or Figs. 9, 10 and 11 of the accompanying drawings.

26. A system anchoring load supporting slabs of facing material having kerfs formed in opposed peripheral edges thereof, constructed and arranged substantially as herein described with reference to and as illustrated in Fig. 12 or Fig. 13 of the accompanying drawings.

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FIG. 1

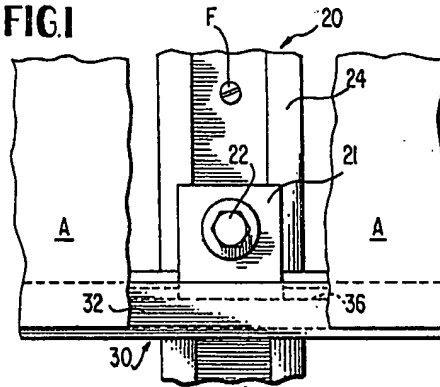


FIG. 2

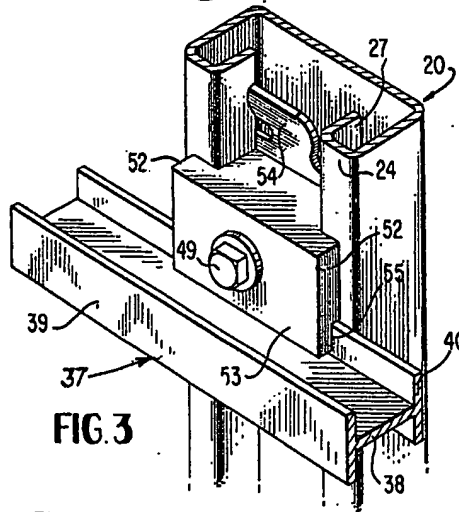
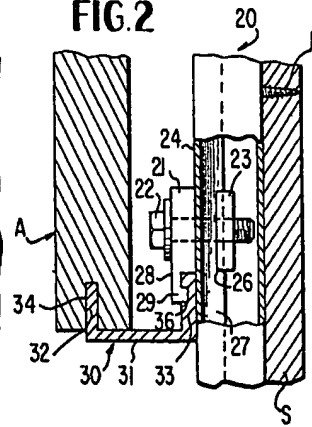


FIG. 3a

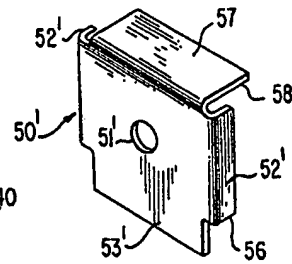


FIG. 4

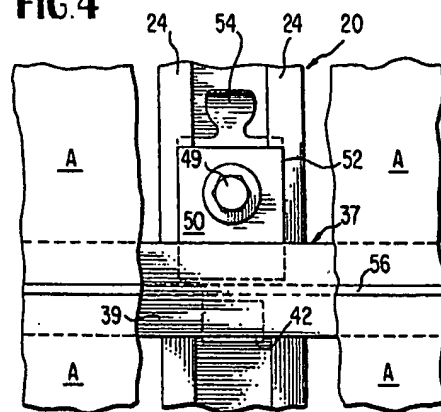
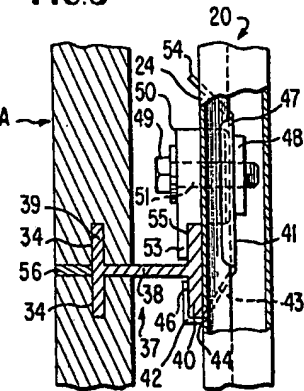


FIG. 5





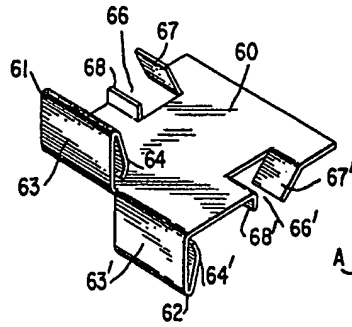


FIG. 6

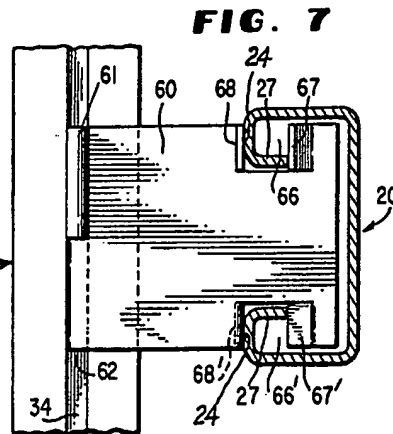


FIG. 7

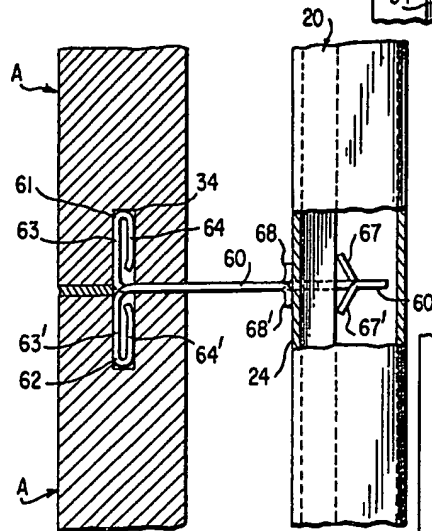


FIG. 8

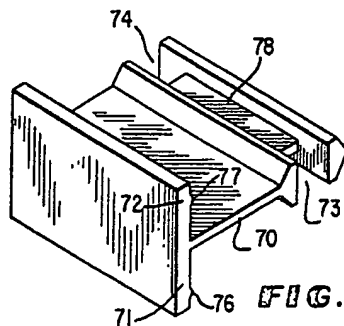


FIG. 9

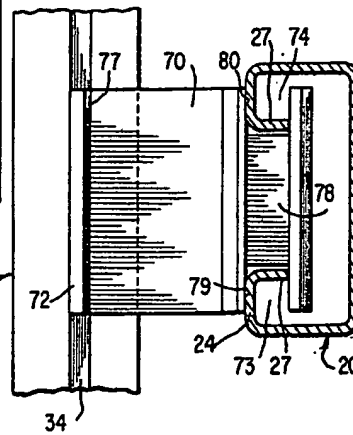
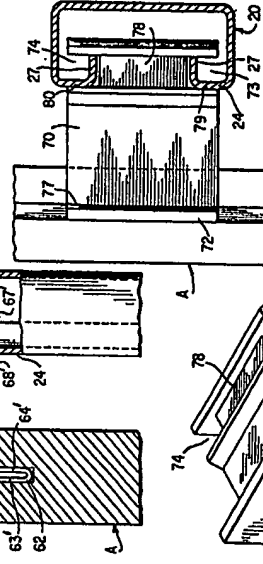
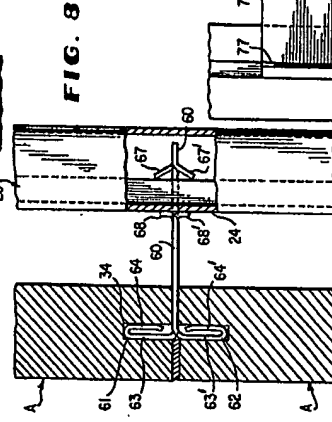
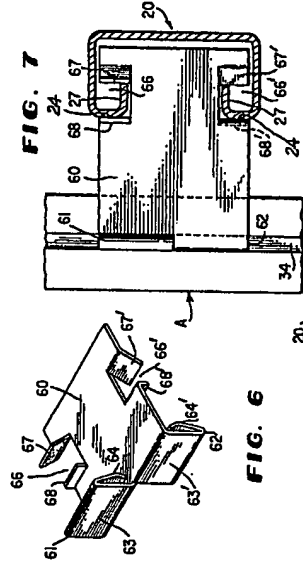
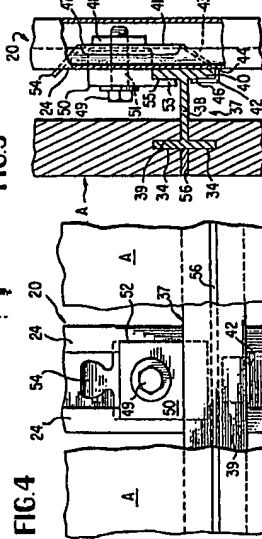
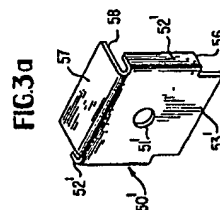
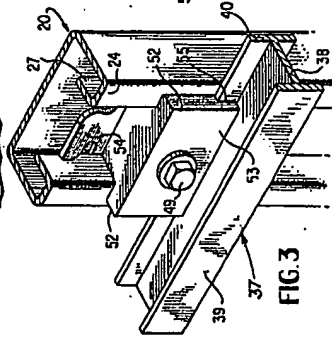
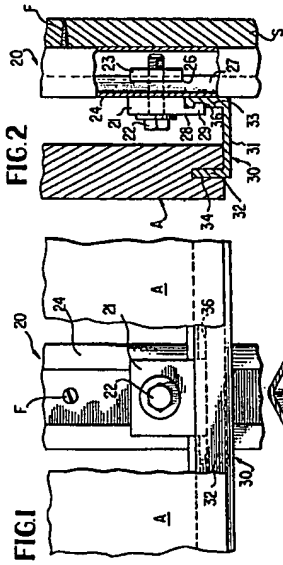
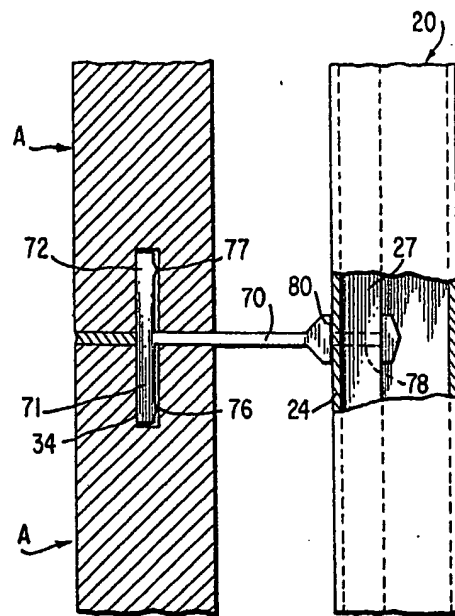
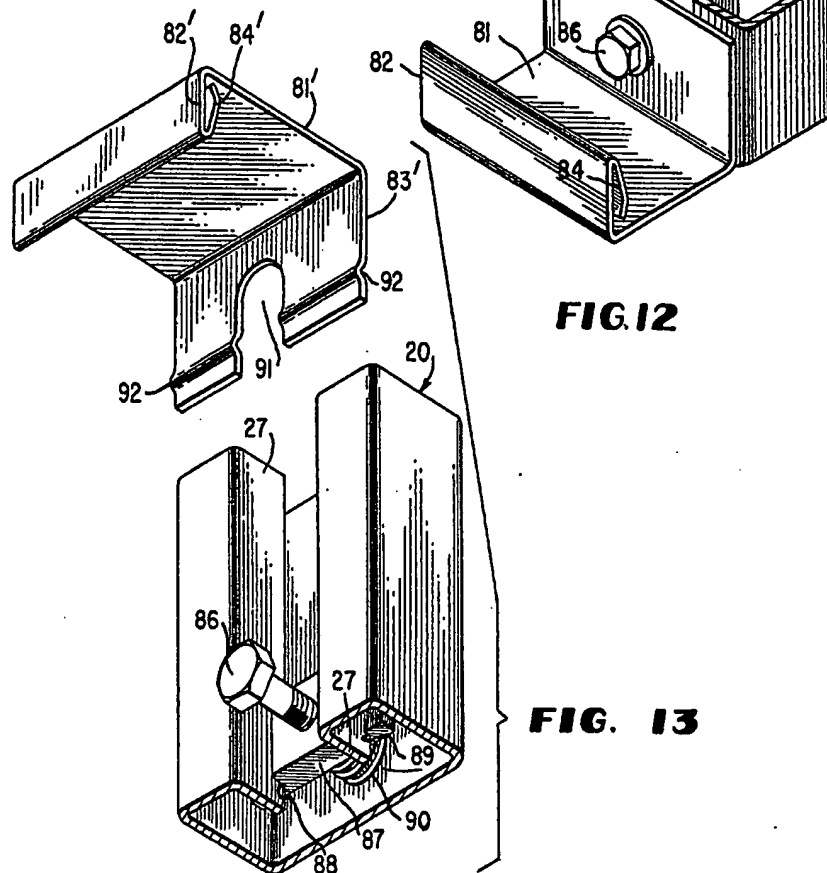


FIG. 10





**FIG. 11**



**FIG. 12**

**FIG. 13**

1,125,123

4 SHEETS

COMPLETE SPECIFICATION

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the Original on a reduced scale.

SHEETS 3 & 4

FIG. 14

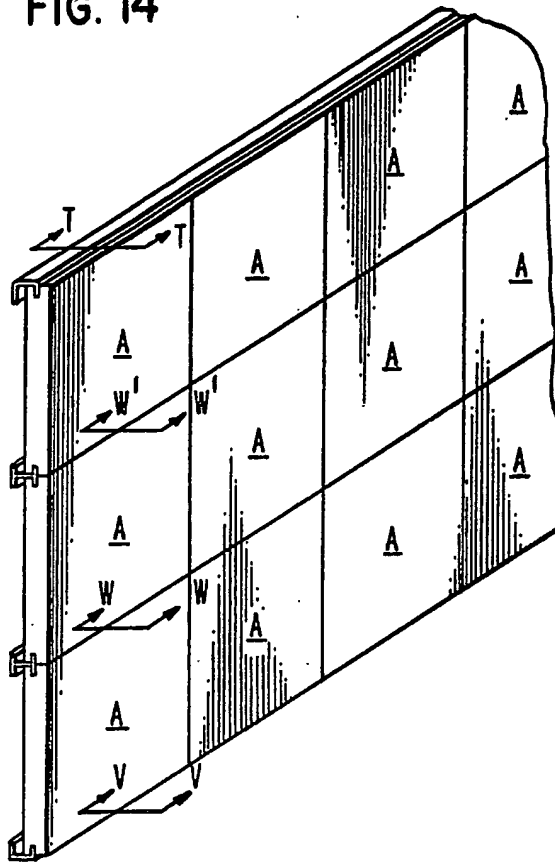
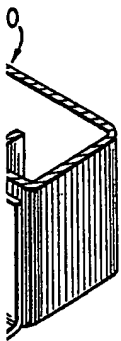


FIG. 11

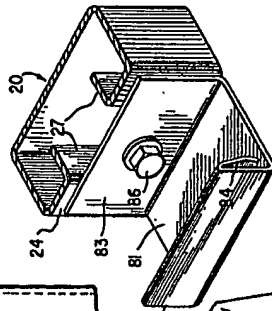
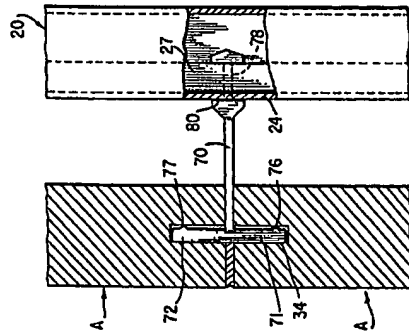


FIG. 12

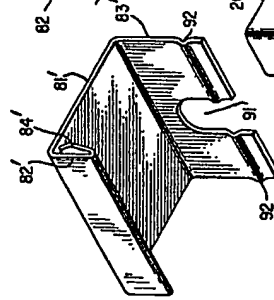


FIG. 13

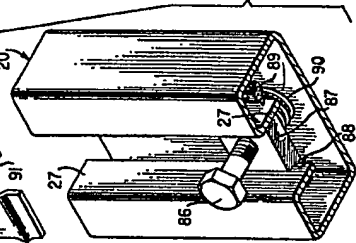
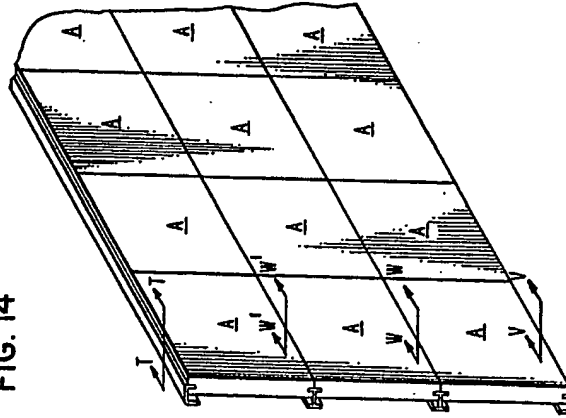


FIG. 14



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